ABSTRACT

A method of an enantioselective nucleophilic addition reaction to carbonyl, which enables an asymmetric synthesis of an optically active α-hydroxy-γ-keto acid ester, an optically active α-hydroxy-γ-amino acid ester, hydroxydiketone compounds, etc. being useful as a raw material or synthesis intermediate for producing a pharmaceutical preparation, an agricultural chemical, a fragrance, a functional polymer or the like. In this method, the nucleophilic addition reaction of enamide compound accompanied by hydroxyl (-OH) formation to carbonyl is carried out in the presence of a chiral catalyst with copper or nickel.